

Patent claims

1. Driver circuit for driving a useful signal having:

5 (a) at least one amplifier circuit (3a, 3b) with low output impedance for the signal amplification of the useful signal;

10 (b) a protection impedance (9a, 9b) respectively connected downstream of the amplifier circuit (3a, 3b) and serving to protect the amplifier circuit (3a, 3b);

15 characterized in that

20 (c) provision is respectively made of a feedback circuit (14a, 14b) for the frequency-dependent signal feedback of the useful signal amplified by the amplifier circuit (3a, 3b).

2. Driver circuit according to Claim 1, characterized

25 in that the amplifier circuit (3a, 3b) is an operational amplifier having an inverting signal input (5a, 5b), a noninverting signal input (4a, 4b) and a signal output (7a, 7b).

3. Driver circuit according to Claim 1 or 2, characterized

30 in that the protection impedance (9a, 9b) is connected between the signal output (7a, 7b) of the operational amplifier (3a, 3b) and a signal line connection (11a, 11b) for the connection of a signal line.
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4. Driver circuit according to Claim 3,
characterized
in that the signal line is a telephone line for
connecting a telephone to the driver circuit (1).
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5. Driver circuit according to one of the preceding
claims,
characterized
in that the driver circuit (1) is of differential
10 construction and has two symmetrically constructed
amplifier circuits (3a, 3b), two symmetrical
protection impedances (9a, 9b) and two symmetrically
constructed feedback circuits (14a, 14b).
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6. Driver circuit according to one of the preceding
claims,
characterized
in that the signal feedback circuit (14a, 14b)
respectively has a capacitor (15a, 15b), which is
20 connected between the signal output (7a, 7b) of the
operational amplifier (3a, 3b) and a signal input
(5a, 5b) of the operational amplifier (3a, 3b), and
a resistor (16a, 16b), which is connected between
the signal line connection (11a, 11b) and the signal
25 input (5a, 5b) of the operational amplifier (3a,
3b).
7. Driver circuit according to one of the preceding
claims,
30 characterized
in that the signal feedback circuit (14a, 14b) feeds
back high-frequency signal components of the useful
signal amplified by the amplifier circuit (3a, 3b)
to the signal input (5a, 5b) of the amplifier
35 circuit (3a, 3b) to a greater extent than low-
frequency signal components of the useful signal

amplified by the amplifier circuit (3a, 3b), so that the output impedance of the driver circuit (3a, 3b) is reduced in a specific first frequency range up to a first limiting frequency (f_{g1}) which lies above the second limiting frequency (f_{g2}) of the useful signal.

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8. Driver circuit according to Claim 7,
characterized

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in that the first frequency range comprises of a [sic] second frequency range provided for the transmission of the useful signal.

9. Driver circuit according to Claim 8,
characterized

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in that the second frequency range is a voice signal band for the transmission of a telephone voice signal.

10. Driver circuit according to Claim 9,
characterized

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in that the second limiting frequency (f_{g2}) of the second frequency range is about 4 kHz.